



# Priority Panel Briefing Alabama Plating Site

*September 2015*



# Alabama Plating Superfund Site

## Site Description

- The Alabama Plating Site is approximately 6 acres and is located in Vincent, Shelby County, Alabama at the corner of County Road 60 and Hwy 231.
- In 1956, the Alabama Plating Company began electroplating operations and later expanded to include hot-dip galvanizing processes until closure in 1996.
- Process wastewaters containing heavy metals (including cadmium, chromium, nickel, and zinc), sulfide waste, corrosive liquids, and cyanide were discharged into 3 unlined lagoons.
- From 1998 to 2001, EPA conducted an extensive time-critical removal action which removed contaminated soils and buildings (\$10.5 million dollars).
- RI/FS completed in 2014. ROD signed FY2014 to address contaminated groundwater.



# Alabama Plating Superfund Site

## Site Layout





# Alabama Plating Superfund Site

## Enforcement

- **Exemption 5: AC/AWP**  
[Redacted text block]
- Did receive \$750,000 from an environmental insurance policy



# Alabama Plating Superfund Site

- **Contaminated media onsite / offsite include:**
  - Groundwater (residuum and bedrock aquifers)
  - Sediment in an unnamed tributary of Spring Creek, Spring Creek, and a wetlands/beaver pond area.





# Alabama Plating Superfund Site

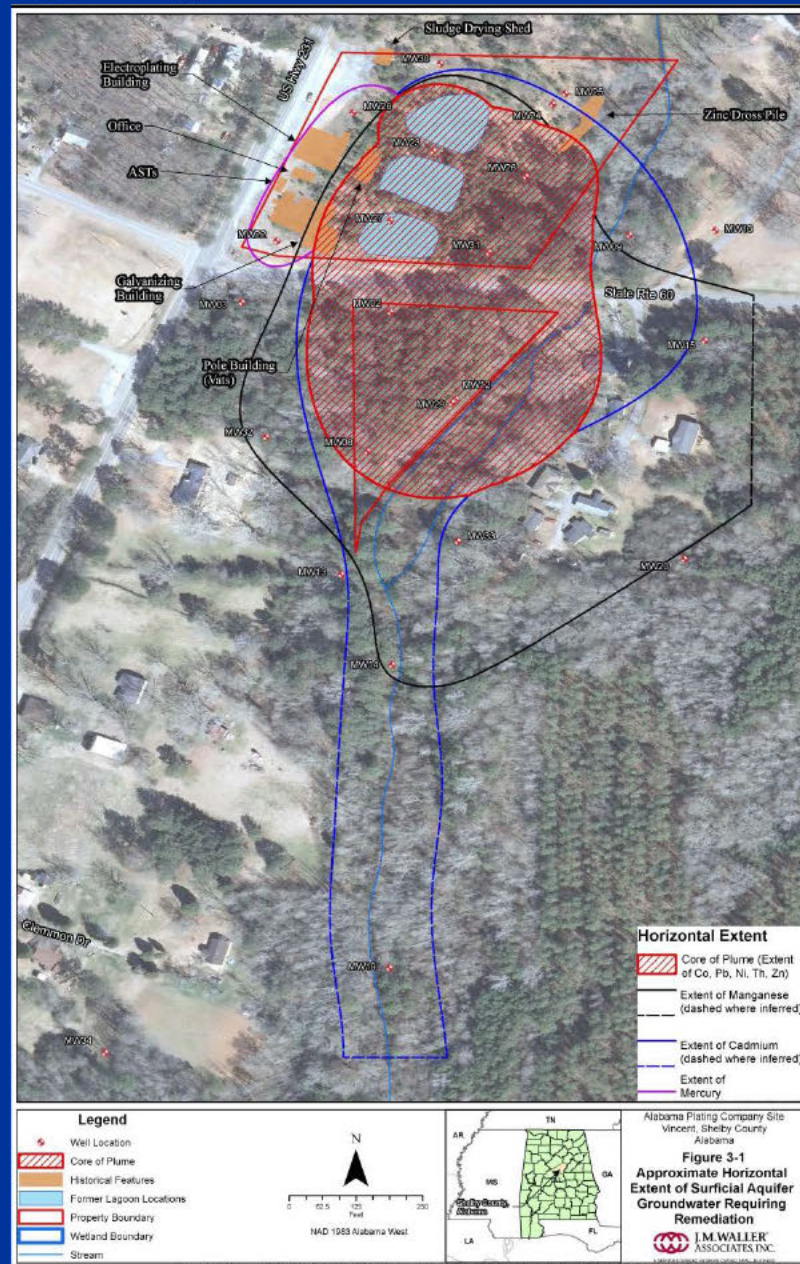
## Nature & Extent of Contamination

- Soil: The previous time-critical removal action removed the soil contamination.
- Groundwater: Arsenic, cadmium, lead, mercury, nickel, and thallium are present above EPA MCLs and/or state groundwater standards. Cobalt, iron, manganese, and zinc are present at concentrations exceeding EPA's health-based RSLs for Tap Water.
- Sediment: Consists of metals exceeding EPA Region 4 Ecological Screening Values (ESVs) for arsenic, cadmium, chromium, copper, lead, nickel, and zinc. The ecological risk assessment concluded that no significant ecological impacts are occurring from these contaminants.



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## Extent of Groundwater Contamination





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## Contaminants of Concern

### HHRA

- Groundwater: aluminum, arsenic, cadmium, cobalt, iron, manganese, mercury, thallium, and zinc

### ERA

- Sediment: none





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## Maximum Concentrations Detected in Groundwater

Contaminant	Concentration
Aluminum	100,000 parts per billion (ppb)
Arsenic	25 ppb
Cadmium	930 ppb
Cobalt	3,100 ppb
Iron	1,100,000 ppb
Lead	520 ppb
Manganese	1,100,000 ppb
Mercury	12 ppb
Nickel	2,400 ppb
Thallium	4.7 ppb
Zinc	1,200,000 ppb



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## Groundwater Contamination

- Source of the groundwater plume was removed in 1998-2001 time-critical removal action.
- Site related groundwater contaminants have migrated from the source and are present in downgradient monitoring wells.
- Drinking water is provided to the area by spring-fed. No private drinking water wells exist in the area.
- A municipal drinking water spring-fed system is downgradient about  $\frac{1}{4}$  mile from the source in the karst aquifer.



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## Unacceptable Site Risks to Receptors

- For residuum groundwater, the overall noncancer hazard index (HI) is 197 for a future child resident, and 57 for a future on-site worker, versus an acceptable HI risk of less than 1.
- For bedrock groundwater, the overall noncancer HI is 123 for a future child resident, and 36 for a future on-site worker, versus an acceptable HI risk of less than 1.



# Alabama Plating Superfund Site

## Selected Remedy

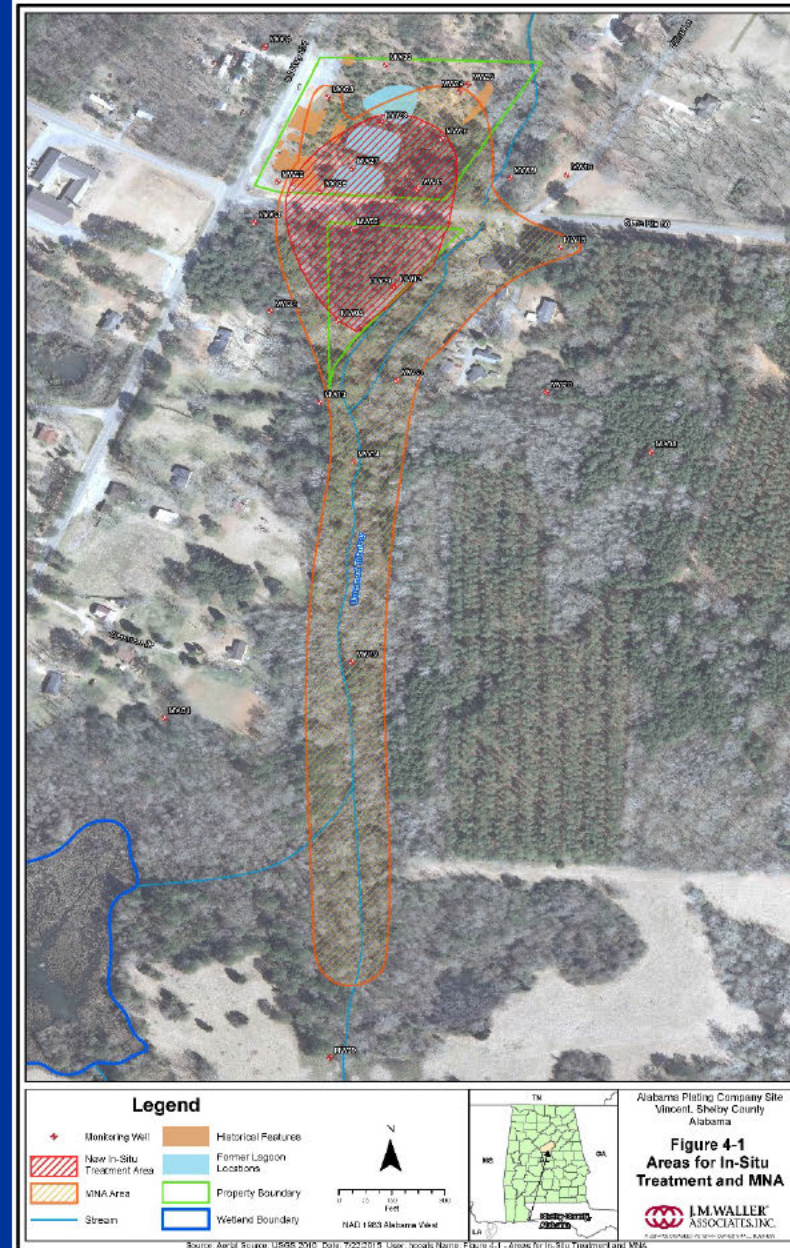
- In-Situ Treatment, MNA, and ICs
  - Treat highest concentrations of COCs in groundwater using in-situ enhanced bioremediation, in-situ chemical reduction, or a combination of both.
  - Implement MNA in areas of lower COC concentrations.
  - Implement ICs to restrict future use of the property to industrial or commercial uses and to prohibit installation of new water supply wells within the plume area.
- Estimated Present Worth Cost: \$3,128,000





# Alabama Plating Superfund Site

## Selected Remedy





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## **Public and ADEM Feedback**

- Overall support for remedy
- Public questions related to selection criteria and concerns for livestock well, potential quarry effects on remediation, site drainage ditch
- Health effects from previous exposures

# Alabama Plating Superfund Site

# Remedial Design

- Pre-Final RD completed in July 2015 that includes injection of calcium polysulfide at 230 points plus MNA monitoring plan.

